



A.D. 1866, *2nd August.* N° 2002.

S P E C I F I C A T I O N
OF
GEORGE WASHINGTON FAIR.
SMOKE-CONSUMING HEATER.

LONDON:
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1867.



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Smoke-consuming Heater.

LETTERS PATENT to George Washington Fair, of Dayton, Montgomery County, State of Ohio, in the United States of North America, for the Invention of “**A SMOKE-CONSUMING HEATER.**”

Sealed the 18th December 1866, and dated the 2nd August 1866.

PROVISIONAL SPECIFICATION left by the said George Washington Fair at the Office of the Commissioners of Patents, with his Petition, on the 2nd August 1866.

I, **GEORGE WASHINGTON FAIR**, of Dayton, Montgomery County, State of Ohio, in the United States of North America, do hereby declare the nature of the said Invention for “**A SMOKE-CONSUMING HEATER,**” to be as follows:—

The nature of the said Invention consists in the construction of a heating apparatus having an arch of fire-clay or other similar material with an aperture through the top which communicates with a smoke consumer formed of sheet iron or other suitable metal, the said arch being provided at each side with flues or air passages. The arch may be formed of fire-clay, fire-bricks, or

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other substance possessing similar fire-resisting properties. The aperture in the top of the said arch extends nearly from end to end thereof, and is by preference provided with a lining of sheet iron or other metal. A fire-grate also extends endwise through the arch and is provided with a doorway closed by a suitable door at one end of the said arch. An ash pan is so fitted under 5 the fire-grate that it can be easily removed and emptied when required. The sides of the fire-place are formed of sheet iron bent over at the top thereof, and extending downward to form flues between the said sides and the sides of the arch. Other flues are formed by placing an exterior covering of sheet iron around the arch, which covering extends over the top thereof. The exterior 10 flues communicate with the smoke consumer, which is by preference constructed in the form of a dome whose apex is provided with an aperture, preferably about three or four inches in diameter. Small holes or apertures are formed at both ends of the fire-place for the admission of cold air into the flues. As the air enters through the said apertures into the interior flues it is 15 heated by coming in contact with the fire in the fire-place, and heats the smoke as it passes with the flame through the long aperture in the top of the arch into the dome or smoke consumer. The air entering through the aperture into the exterior flues also becomes heated in passing over the arch, and entering the smoke consumer or dome causes the smoke to whirl or turn 20 rapidly round, the cold air at the same time passing down through the aperture in the apex of the said dome prevents the rising of the smoke, which is completely consumed by the flame from the top of the arch. As no smoke escapes from the dome or fire-place the employment of a chimney is unnecessary, and the apparatus may be located in the centre of a room, and 25 will form a comfortable stove for use in dwelling houses and other buildings.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said George Washington Fair in the Great Seal Patent Office on the 2nd February 1867.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GEORGE 30
WASHINGTON FAIR, of Dayton, Montgomery County, State of Ohio, in the United States of North America, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Second day of August, in the year of our Lord

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One thousand eight hundred and sixty-six, in the thirtieth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto the said George Washington Fair, Her special licence that I, the said George Washington Fair, my executors, administrators, and assigns, or such
5 others as I, the said George Washington Fair, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands,
10 and Isle of Man, an Invention for “A SMOKE-CONSUMING HEATER,” upon the condition (amongst others) that I, the said George Washington Fair, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be
15 performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said George Washington Fair, do hereby declare the nature of my said Invention, and in what manner the same is
20 to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Sheet of Drawings forming a part of this Specification:—

The nature of the said Invention consists chiefly in constructing a heating apparatus with an arch of fire-clay or other similar fire-resisting material, the
25 said arch being provided at the top with an aperture which communicates with a smoke consumer, and having flues or air passages at the sides. The said arch may be formed of fire-clay, fire-bricks, or other substance possessing the necessary fire-resisting properties. The aperture in the top of the said arch extends nearly from end to end of the same, and is by preference provided
30 with a lining of sheet iron or other metal. A fire-grate also extends endwise through the arch, and is provided at one end with a doorway and door. An ash pan is fitted under the fire-place in such a manner as to be easily removed and emptied when required. The sides of the fire-place are formed of sheet iron bent over at the top and extending downward to form flues between the
35 said sides and the sides of the arch. Other flues are formed by placing an exterior covering of sheet iron around the said arch, which covering extends over the top of the same. The exterior flues communicate with the smoke consumer, which is by preference constructed in the form of a

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dome and provided at its apex with an aperture about three or four inches in diameter.

DESCRIPTION OF THE DRAWINGS.

Figure 1 is a vertical transverse section of my improved apparatus; Figure 2 is a vertical longitudinal section of the same. Like letters refer to the same parts in each of the Figures. 5

A is an arch of fire-clay, fire-brick, or other suitable material, which is provided at the top or crown with a long narrow aperture B; C is the fire-place, and D the door of the same; E is the grate of the said fire-place; F is the ash pan, which is fitted below the said grate in such a manner as to be easily drawn out endwise through the aperture F¹ below the door D; G, G, are flues formed between the sides of the arch A and the fire-place C; H, H, are other flues which extend around the apparatus outside and over the arch A, inside the sheet iron casing H¹; J is a dome or chamber, by preference constructed of sheet iron, and having an aperture J¹ in its apex, which aperture may be round or square, but is by preference made circular and about three or four inches in diameter. The apertures K, K¹, at the back and front of the apparatus are provided to admit cold air into the flues G, H. As the air enters through the apertures K into the flues G it comes in contact with the fire in the fire-place C and heats the smoke as the latter passes (with the flames of the fire) through the aperture B into the dome or smoke consumer J. The air which enters through the apertures K¹ into the flues H also becomes heated in passing over the arch A, and rushes into the dome or smoke consumer J, causing the smoke to whirl or turn rapidly round. A quantity of cold air passes at the same time down through the aperture J¹ in the top of the dome J, and prevents the rising of the smoke which is completely consumed by the flames at the top of the arch A. As no smoke escapes from the fire-place C or dome J the employment of a chimney is unnecessary. The apparatus may be therefore conveniently located in the centre or other desired position in a drawing room or other apartment, and will form a comfortable and economical stove for use in dwelling houses and other buildings. 10 15 20 25 30

Having thus fully described my said Invention, and shown how the same may be conveniently and advantageously carried into practice, I claim,—

First, the arch A of fire-clay or other suitable material constructed with the aperture B in its top or crown, and arranged in combination with the fire-place C and interior flues G, substantially as and for the purpose set forth. 35

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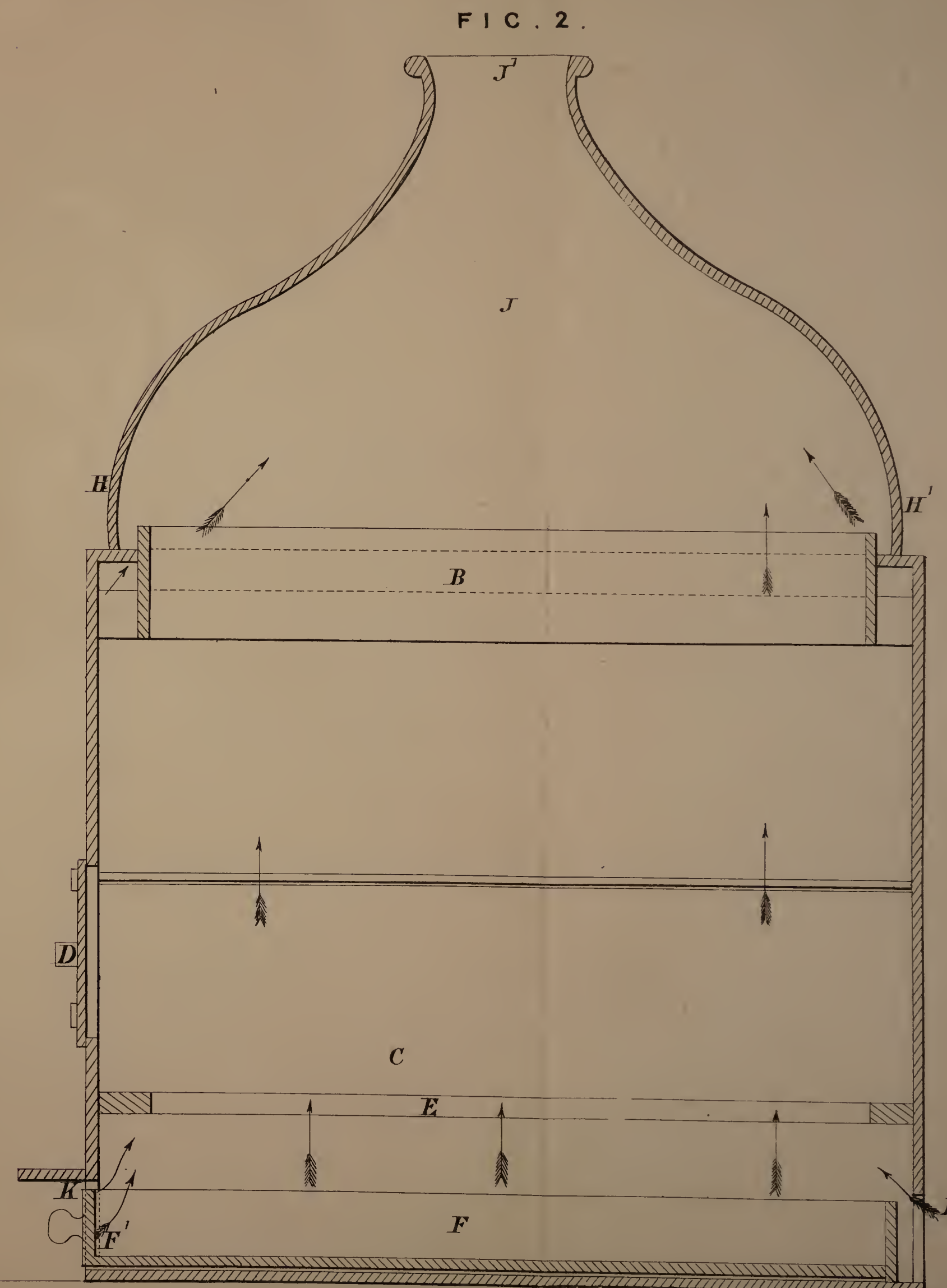
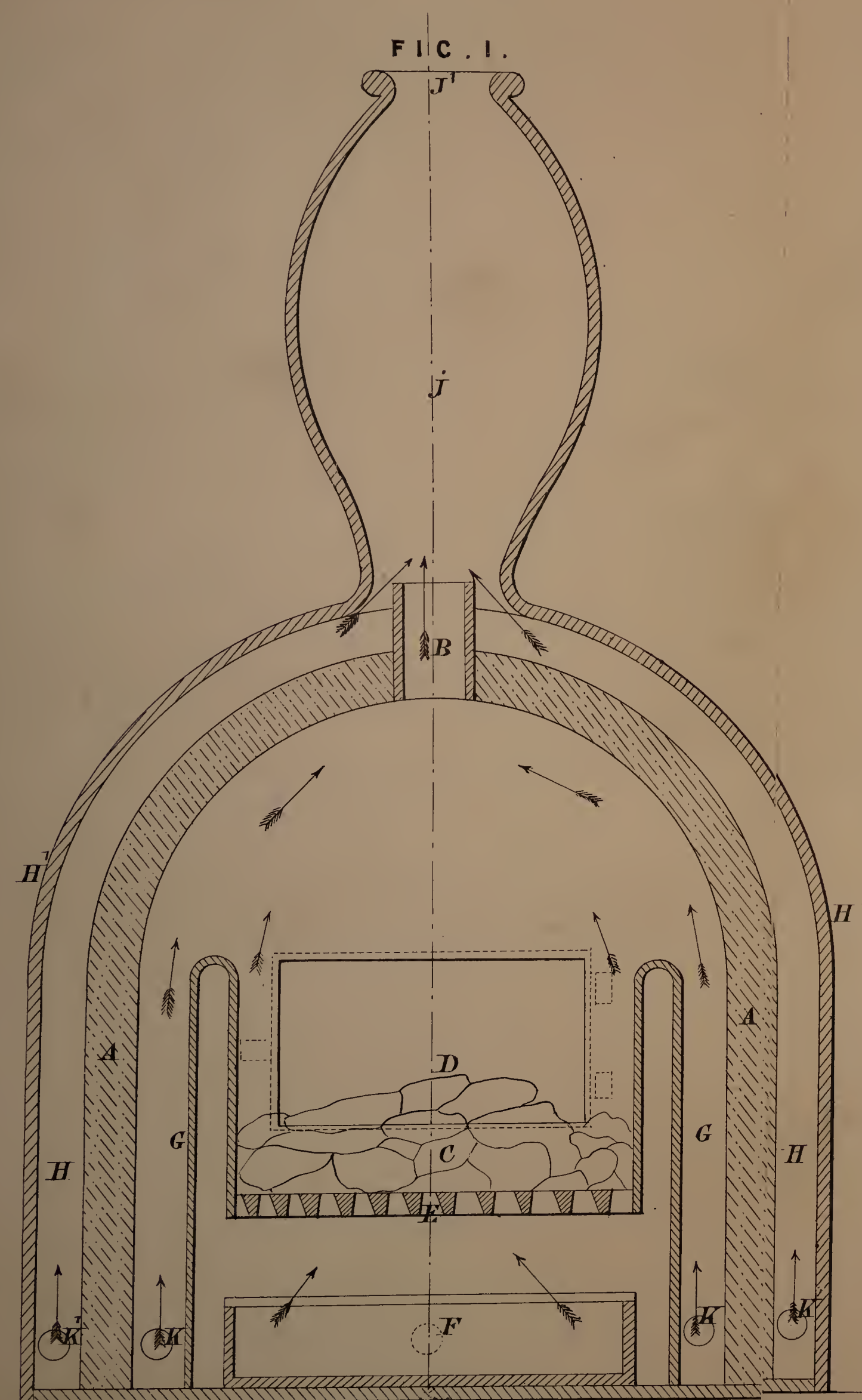
Second, the exterior flues H formed between the arch A and sheet iron casing H¹, and arranged in combination with the dome J, for the purpose and substantially in the manner set forth.

5 In witness whereof, I, the said George Washington Fair, have hereunto set my hand and seal, this Second day of January, in the year of our Lord One thousand eight hundred and sixty-seven.

GEORGE WASHINGTON FAIR. (L.S.)

LONDON :

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Printers to the Queen's most Excellent Majesty. 1867.



The filed drawing is partly colored

Drawn on Stone by Malby & Sons.

